

Name:  
Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, July 2020**

**Course: High Voltage Engineering**

**Program: B.Tech Electrical Engineering**

**Course Code: EPEG3004**

**Semester: VI**

**Duration: 3 Hrs**

**Max. Marks: 100**

**Instructions:**

1. Attempt all the questions (Theory, Numerical, Case study etc.) on A4 size blank sheets.
2. Attempt all questions serially as per question paper.
3. Answer should be neat and clean. Draw a free hand sketch for circuits/tables/schematics wherever required.
4. Scan the whole answer script and check the resolution carefully before upload on the blackboard. Note that answer scripts will be considered for evaluation only through Blackboard. No other mode of submission is acceptable.
5. You are expected to be honest about each attempt which you make to progress in life

S. No.		Marks	CO
	<b>Section A</b>		
Q.1	a) With neat diagram explain the need and importance of Sphere Gaps for HV applications. Also explain various factors affecting the performance of Sphere Gaps b) Explain the various tests (any three) conducted on UG cable	10 10	CO5 CO5
Q.2	a) Explain the construction and working of cascaded connection of transformer for HV AC generation and limitations of the same. b) With neat diagram explain the Lightning wave. Also explain various factors affecting the 'effect of Lightning'. Also, describe how 'time lag property' of gaseous insulating material affects the performance in association with Lightning wave.	12 08	CO3 CO3
	<b>Section B</b>		
Q.3	Explain the terms: 50% Flashover Voltage, 100% Flashover Voltage, Dry & wet flashover tests.	8	CO4
Q.4	Explain the construction and working of Current Generator.	8	CO3
Q.5	With neat diagram explain the use of Capacitive Voltage Transformer	4	CO3
Q.6	Explain the working principle of resonance circuit for high frequency AC generation	4	CO3
Q.7	Explain the effect on leakage current on the performance on insulating material	5	CO2
Q.8	Explain the procedure for preparation of Specimen for Resistivity measurement in HV testing.	4	CO4
Q.9	Explain the ageing effect on the performance of solid insulating material with relevant graph.	9	CO2
Q.10	With neat diagram explain the mechanism of lightning stroke	8	CO4

NOTE : The submission time of the Question Paper Answer Sheet is 24 Hrs from the scheduled time (exceptional provision due to extraordinary circumstance due to COVID-19 and due to internet connectivity issues in the far-flung areas).

No Submission will be entertained after 24 Hrs

Q.11	Explain the construction and working of Bridge for measurement of capacitance for HV insulating material.	10	CO4
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